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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/801,130	BONABEAU, ERIC W.	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/10/07, 11/19/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 10, 2007 has been entered.

Summary Of Instant Office Action

2. Claims 44-65 are currently pending the application and have been examined on the merits discussed below in this **NON-FINAL** Office Action.

Response to Amendment

3. In the amendment received October 10, 2007, Applicant has amended claims 44, 54, 55, and 65.

4. The previous rejection of claims 44-65 raised under 35 U.S.C. 112, second paragraph is withdrawn in view of the claim amendments submitted on October 10, 2007.

Response to Arguments

5. Applicant's arguments with respect to claims 44, 54, 55 and 65 have been considered but are moot in view of the new ground(s) of rejection.

The arguments made by Applicant with respect to claims 44, 54, 55, and 65 are directed towards newly amended subject matter which are addressed in the updated Office Action below.

Specifically, Applicant argues that Keane and Shinagawa do not teach limitations (d)(i) and (e) of newly amended claim 44. Specifically, Applicant argues that the fitness of a particular evolving business model is not evaluated independent of other evolving models in a "static" environment, but evaluates a business model in an environment or ecosystem which includes other business models, including models with which it may be competing, and which other models also are simultaneously evolving in the same dynamic business environment or ecosystem. Applicant asserts that the evolution of the business models in a ecosystem take into account the simultaneous evolution of other models.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 44-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keane (U.S Patent #5,737,581) in view of Shinagawa et al (U.S Patent #5,897,629) and Summers (US Patent #6,236,955).

As per claim 44, Keane teaches a method for choosing a business model to solve a selected business problem, the method comprising:

(a) describing a plurality of computer business models **(memory 102 contains at least a quality model 104 and possibly other models, such as business 105, accounting 106, consumer 107, financial 108, and macroeconomic 109)**, [Column 3, lines 25-30, Column 7, lines 6-8 and Figure 1 {104, 105, 106, 108 and 109}], each describing operations of businesses for solving said business problem **(enable a user to make certain decisions regarding which quality assurance measures to install; business model 400)** [Figure 4 {400}, described Column 2, lines 52-55 and Column 7, line 6 - Column 8, line 25], and having an ability to respond to a customer model patronizing it by sending at least one value **(product purchased data 214 and market demand and returns data 227)** to the said customer model **(business model receives information regarding consumer returns from Block 807 of the consumer model)** [Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25];

(b) describing a business-model environment comprising a business ecosystem containing said plurality of business models and further containing at least

one customer model having an ability to choose to patronize one or more of said business models in the said business ecosystem, based at least in part upon at least one evolvable characteristic of the said business models **(business model receives information regarding consumer returns from Block 807 of the consumer model, product purchased data 214, market demand and returns data 227; the labor rate is considered a parameter and subject to change while the type of business and characteristic defects are constant relative to a particular business; data such as the nature of the company, the characteristic defects and causes, and past performance is made resident in memory 102 by Block 52. This data customizes a particular business to provide realistic product flow and defects, rather than operating as a preset, arbitrary model. In one particular embodiment, a user may customize "defects" to his particular business to more realistically emulate the characteristic and cause of a defect)** [Column 3, lines 48-55, Column 4, lines 23-26, Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25];

(c) determining an operational performance of each said business model in the business ecosystem containing said plurality of business models and further containing at least one customer model having an ability to choose to patronize one or more of said evolvable business models in the said business ecosystem **(product purchased data 214 and market demand and returns data 227; business model receives information regarding consumer returns from Block 807 of the consumer model)** [Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7,

line 5-column 8, line 25] by simulating [Column 4, lines 34-36 and Figs. 2 and 4, wherein execution (or implementation) of steps of the Figures and simulation of the system infer operations for determining performance of business(es) in accordance with above discussed plurality of business models]:

(i) the said plurality of business models **(memory 102 contains at least a quality model 104 and possibly other models, such as business 105, accounting 106, consumer 107, financial 108, and macroeconomic 109)**; [Figure 1 {100 and 104, 105, 106, 108, 109}, and Column 3, lines 25-30] and

(ii) the said at least one customer model **(consumer model 107)** [Figure 1 {100 and 104, 105, 106, 108, 109}, and Column 3, lines 25-30]; and

(iii) one or more interactions between evolvable business models and customer models in which at least one of said customer models chooses to patronize at least one of said business models in the said business ecosystem, based at least in part upon one evolvable characteristic **(the labor rate is considered a parameter and subject to change while the type of business and characteristic defects are constant relative to a particular business; data such as the nature of the company, the characteristic defects and causes, and past performance is made resident in memory 102 by Block 52. This data customizes a particular business to provide realistic product flow and defects, rather than operating as a preset, arbitrary model. In one particular embodiment, a user may customize "defects" to his particular business to more realistically emulate the characteristic and cause of a**

defect) of the said evolvable business models, and at least one of said patronized business models responds by sending at least one value to the said at least one customer model; **(business model receives information regarding consumer returns from Block 807 of the consumer model, product purchased data 214, market demand and returns data 227)** [Column 3, lines 48-55, Column 4, lines 23-26, Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25];

(d)(i) at least one customer model having an ability to choose to patronize one or more of said plurality of evolvable business models **(product purchased data 214 and market demand and returns data 227; business model receives information regarding consumer returns from Block 807 of the consumer model)** wherein the said operational performance of the said evolvable business model is affected by at least one evolvable characteristic of one or more other of the said plurality of business models in the said business ecosystem **(the labor rate is considered a parameter and subject to change while the type of business and characteristic defects are constant relative to a particular business; data such as the nature of the company, the characteristic defects and causes, and past performance is made resident in memory 102 by Block 52. This data customizes a particular business to provide realistic product flow and defects, rather than operating as a preset, arbitrary model. In one particular embodiment, a user may customize "defects" to his particular business to more realistically emulate the characteristic and cause**

of a defect) [Column 3, lines 48-55, Column 4, lines 23-26, Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25];

(e) repeating steps (c) and (d) at least one time **(running another period of the model)**, each said repetition of (c) simulating the plurality of business models resulting from the previous repetition of step (d) [Figure 2 {254}, column 4, lines 34-38 recited with column 6, lines 39-49, wherein "simulation continues" after the determination made at step 254, and "user given the opportunity to reconfigure (generate) next (or new) quality model to improve performance" inferring claimed "repeating the steps" for simulating models obtained in the prior (or previous) steps as per user's choice of steps including (c) and (d)]; and

(f) choosing the business model for solving the selected business problem based at least in part upon the determined fitness of the said business model **(enable a user to make certain decisions regarding which quality assurance measures to install; business model 400; which is inferred by the enablement of a user to make certain decisions regarding which quality assurance measures to install)** [Figure 4 {400}, described Column 2, lines 52-55 and Column 7, line 6 - Column 8, line 25, Figure 1 {105} and column 2, lines 54-55].

Keane does not teach the use of evolvable business models, or the steps of:

(a), (c), and (d)(i) each computer-evolvable business model having an ability to be in competition with other computer-evolvable business models for solving the said business problem;

(d) generating a next plurality of evolvable business models from the said plurality of evolvable business models by performing an evolutionary method including:

(i) for at least one of said evolvable business models, determining aid model's fitness based at least in part upon the operational performance of the said evolvable business model in the said business ecosystem containing said plurality of evolvable business models;

(ii) selecting at least one of said evolvable business models based at least in part upon the said at least one model's determined fitness, and

(iii) transforming the at least one selected evolvable business model into new evolvable business models incorporating at least one element of said at least one selected evolvable business model, by applying at least one genetic operator;

Shinagawa et al. is directed to utilizing genetic algorithm to find an optimal solution to a problem, resulting in the creation of new and modified delivery routes.

Shinagawa et al teaches the step of:

(a), (c), and (d)(i), each computer-evolvable business model has an ability to be in competition with other computer-evolvable business models for solving the said business problem **(a population of individuals (i.e., candidate solutions) are created, which initial population is called the first generation. Then the selection is made on the first generation. In this selection process, the fitness value of each individual is calculated from its chromosome expressed in a linear string of**

genes. A new population is selected from among the current individuals in such a way that the individuals having higher fitness values will survive at higher probabilities) [Column 2, lines 27-36];

(d) generating **(producing)** a next plurality of evolvable **[the application of a genetic algorithms renders the models used as being evolvable]** business models **(new proposed delivery plans)** by performing an evolutionary method [Column 5, line 66 through column 6, line 54, wherein delivery planning unit 12 producing or "generating" a set or "plurality" of modified or new proposed delivery plans as indicated by column 6, lines 35-40; modified delivery route serving as new or next route and on finalizing said modified or new or next routes for all carriers, delivery planning unit 12 producing or generating new or next delivery plans which are termed as proposed delivery plans; said delivery plans are models, lines 50-52. Moreover, said delivery models or plans representing "business models", since they relate to the business of delivery of packages, lines 52-54, and cited genetic algorithm, Column 4, lines 63-65; searching strategy optimization means 1 creates individuals 3a-3c using a genetic algorithm. The individuals 3a-3c have their respective chromosomes, each of which indicates a strategy for solution search, Column 4, lines 29-34] including:

(i) determining business-model fitness in dependence on the evolvable business-model models based at least in part upon the operational performance of the said evolvable business model in the business ecosystem containing said plurality of evolvable business models [Column 6, lines 15-23, wherein "evaluating fitness" of proposed delivery plans or models indicating

"determining business model fitness" and said fitness relating to "operational business model performance" as discussed in claim 1c above; The carrier allocation unit 11 evaluates the fitness of each proposed delivery plan received from the delivery planning unit 12, Column 9, lines 12-14; The carrier allocation unit 11 evaluates chromosomes 50, 50a, and 50b by calculating the fitness values of delivery plans 41, 42, and 43 derived from them, respectively, Column 9, lines 21-24];

(ii) selecting at least one of said evolvable business models based at least in part upon the said at least one model's determined fitness [Column 6, lines 15-23, wherein allocation unit 11 "selecting fittest individuals based on their fitness values", and cited individuals pointing to delivery plans or models or "business models", column 2, lines 22-23: individuals being candidate solutions, and said solutions are delivery plans, column 6, lines 21-23: choosing delivery plans or models as the optimal solutions; Based on the fitness values, the carrier allocation unit 11 selects a plurality of individual pairs, Column 9, lines 15-16]; and

(iii) transforming the at least one selected evolvable business model into new evolvable business models incorporating at least one element of said at least one selected evolvable business model, by applying one or more genetic operators [Column 5, lines line 66 through column 6, line 3, wherein applying genetic algorithm and its operators crossover, mutation etc. indicating reference's performing "transformation or transforming" above discussed selected delivery

plans or models or business models into above discussed next or new delivery plans or business models] directly to the business models, wherein the new business models incorporate elements of the selected business models **(The mated parent individuals are then subjected to a crossover process. Crossover algorithms combine one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual. The offspring individual produced through such a crossover process inherits some traits from both parents)** [Column 2, lines 37-43].

Keane teaches the step of simulating quality of a business's product flow, yet Keane does not expressly teach the application of a genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model. However, Shinagawa et al. discloses the use of genetic algorithms that perform the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models. Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems,

which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2, lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use as a planning guide to determine the impact of different models on business performance.

The combined teachings of Keane and Shinagawa et al. do not explicitly teach that the computer-evolvable business models have an ability to be in marketplace competition with other computer-evolvable business models in a business ecosystem. As per (e), the Keane-Shinagawa combination also does not explicitly disclose that the presence of evolved business models in the said marketplace in the said business ecosystem in a repetition of steps (c) and (d) changes at least one parameter of the said marketplace such that an unchanged business model would achieve a different

operational performance in the said repetition of steps (c) and (d) than in the previous performance of the said steps.

However, Summers teaches a management training simulation of a competitive marketplace that comprises a plurality of evolvable marketplace competitor models **(The display gathers information from the simulated business situations and displays this information for the students. After witnessing the information, the students make decisions. The students enter their decisions into the business situation via an input device)** in a competitive industry **(The simulated business situation is a competitive industry. The simulated competitive industry is composed of at least two types of components: a marketplace model and at least one firm controlled by a student)**, where the various models are in competition with each other and the interaction of competitors within an industry is simulated **(The marketplace model simulates, among other things, products, customers, market segments, and technology. The marketplace model influences the structure and dynamics of the simulated competitive industry. Each student manages a separate firm. Through their respective firms, students compete against each other for profits and market share in the marketplace)** [Column 2, lines 32-39, 52-63]. Summers also teaches a management training simulation **(Each application of an MTS is called a learning solution. A learning session progresses through rounds where each rounds consists of the following [five] sequenced steps)** where the evolvable business models are continually updated and that interactions between the models are simulated

via customer model patronization of marketplace business models **(1. Each interface collects information describing its student's firm and the marketplace. The firm's characteristics constitute the information describing the student's firm. Information about the marketplace might include, for example, the products previously sent to the marketplace, the prices offered, sales volumes, and competitor's market shares)** to generate a next generation of evolvable business models **(2. Using the information presented by the interface, each student determines his firm's decisions for the current round. These decisions might include, for example, pricing products, purchasing manufacturing capacity, and producing products. 3. With an input means each student enters his decisions into the interface. The interface sends these decisions to the student's firm. 4. Each student's firm implements its student's decisions. The produced products are sent to the marketplace)**. The changes made to the evolvable business models yield a change in at least one parameter of the marketplace **(5. Having received the production from all the firms, the marketplace simulates the sale of all firms' products. This simulation might include, for example, evaluating firms' products and calculating demand. For these tasks, the marketplace model will contain a product evaluator for evaluating products and a market manipulator for calculating demand. After the sales are determined, the sales' revenues are sent to the appropriate firm. After completing these five steps a round is complete. The next round begins with step one)** such that an unchanged business model would achieve a different operational performance than in the previous simulation of the

marketplace **(The market manipulator takes the firms' production as input and calculates the total size of the market and the share of demand for each firm. This demand is then compared to firms' actual production to determine sales) {If the business model of a firm is unchanged, the production quantity is unchanged, but the production quantity of other competing business models in the ecosystem is changed, which changes the total market size and each firm's market share}** [Column 3, lines 30-60, Column 4, lines 49-53, Column 5, lines 19-32, 35-62].

Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations using genetic algorithms, by creating a plurality of models, assessing the model fitness, and choosing the best model for further analysis [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Similarly, Summers is an analogous reference directed towards simulating decision making in a business context, simulating the business model performance of a plurality of firms in a marketplace ecosystem, and allowing users to dynamically modify the business model of each firm. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of the Keane-Shinagawa combination to include the steps of simulating a plurality of business models in the marketplace of a business ecosystem, and providing for the change in at least one parameter of a marketplace such that an unchanged

business model would achieve a different operational performance in future repetitions (compared to previous reiterations) of the steps of determining operational performance of each evolvable business model and generating a next plurality of evolvable business models, because by simulating an engagement with their competitors in the simulated marketplace ecosystem, companies learn to anticipate the competitive reactions to their various moves, and using that information, choose the best strategy for itself.

As per claim 45, Keane teaches the method of claim 44, wherein an evolvable business model **(memory 102 contains at least a quality model 104 and possibly other models, such as business 105, accounting 106, consumer 107, financial 108, and macroeconomic 109)**, [Column 3, lines 25-30, Column 7, lines 6-8 and Figure 1 {104, 105, 106, 108 and 109}] comprises at least one building block **(capital, material and labor requirements of quality assurance measures and production, product pricing, etc.)**.

As per claim 46, Keane teaches the method of claim 45, wherein the said at least one building block is chosen from a group consisting of:

(a) at least one value proposition building block, each said value proposition building block comprising a description of at least one of: natures of one or more goods or services provided, qualities of the said goods or services provided, customers for said goods and services provided, relations with other business models, and marketing to customers or business models **(goods/services purchased by customers,**

returning defective merchandise and switching to competitive produces due to defects) [Column 5, lines 29-55];

(b) at least one operational approach building block, each said operational approach building block comprising a description of at least one of: inputs needed for one or more goods or services provided, technology employed to produce said goods or services provided, and capital and labor needed to produce said goods or services provided **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.)** [Column 5, lines 12-14 and 29-30 recited with column 4, lines 2-10]; and

(c) at least one revenue mechanism building block, each said revenue mechanism building block comprising a description of at least one of: a margin or an amount per transaction, a margin or an amount per unit time, a margin or an amount per unit volume, a transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism, and a membership fee pricing mechanism **(pricing information for the product, initial stock price and book value, cost requirements for quality assurance measures and production)** [Figure 1 {106, 108}, column 4, lines 2-18 and column 2, line 55].

As per claim 47, Keane teaches the method of claim 44, wherein each evolvable business model **(memory 102 contains at least a quality model 104 and possibly other models, such as business 105, accounting 106, consumer 107, financial 108, and macroeconomic 109)**, [Column 3, lines 25-30, Column 7, lines 6-8 and

Figure 1 {104, 105, 106, 108 and 109}] has associated with it a performance model **(which is inferred by the enablement of a user to make certain decisions regarding which quality assurance measures to install)** [Figure 1 {105} and column 2, lines 54-55].

As per claim 48, Keane teaches the method of claim 47, wherein the said performance model comprises a financial model **(financial model 108)** [Column 3, lines 25-27].

As per claim 49, Keane teaches the method of claim 48, wherein the said financial model determines at least one of revenue, profit, market share, and market capitalization **(goods/services purchased by customers, returning defective merchandise and switching to competitive produces due to defects, product purchased data 214 and market demand and returns data 227)** [Column 5, lines 29-55].

As per claim 50, Keane teaches the method of claim 44, wherein the business ecosystem further comprises at least one supplier which has the ability to interact with at least one of said plurality of evolvable business models **(Raw materials are purchased from suppliers. This material is stored, inspected, processed and the final Product inspected before being shipped to consumers. Consumers use the product, and a portion of them discover defects. Of this portion, some return the**

defective Product to the business; business model receives information regarding consumer returns from Block 807 of the consumer model) {materials are purchased from suppliers, the business model itself is a supplier to consumer models} [Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25], and wherein determining an operational performance of an evolvable business model further comprises simulating the said at least one supplier model, and one or more interactions between evolvable business models, supplier models, and/or customer models **(goods/services purchased by customers, returning defective merchandise and switching to competitive produces due to defects, product purchased data 214 and market demand and returns data 227)** [Column 5, lines 29-55].

As per claim 51, Keane does not explicitly teach the method of claim 44, wherein said at least one genetic operator comprises a cross-over operator which transforms at least two parent evolvable business models into at least one new evolvable business model by combining characteristics of both parent business models into characteristics of the at least one new evolvable business model.

Keane teaches business models (as discussed above) but not cross-over operators which transform at least two parent business models into at least one new business model by combining characteristics of both parent business models into the characteristics of the at least one new business model. However, Shinagawa et al

teaches a cross-over process combining one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual [Column 2, lines 37-43].

Keane teaches the step of simulating quality of a business's product flow, yet Keane does not expressly teach the application of a genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model. However, Shinagawa et al. discloses the use of genetic algorithms that perform the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models. Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems, which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2, lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic

operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use as a planning guide to determine the impact of different models on business performance.

As per claim 52, although not taught by Keane, Shinagawa et al. teaches the method of claim 44, wherein said at least one genetic operator comprises a mutation operator **(mutation process)** which transforms a parent evolvable business model into a new evolvable business model by modifying a characteristic of the parent business model **(changes genes located in certain loci of a chromosome to other values, thereby producing a new individual; The mated parent individuals are then subjected to a crossover process. Crossover algorithms combine one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual. The offspring individual produced through such a crossover process inherits some traits from both parents)** [Column 2, lines 37-49].

Keane teaches the step of simulating quality of a business's product flow, yet Keane does not expressly teach the application of a genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model. However, Shinagawa et al. discloses the use of genetic algorithms that perform the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models. Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems, which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2, lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et

al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use as a planning guide to determine the impact of different models on business performance.

As per claim 53, Keane teaches the method of claim 44, wherein a business model comprises a description of at least one of inputs to a business, values output from the said business, transformations of inputs into said business to values output from said business at least in part by the use of capital and labor, and at least one pricing model for said business **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.; business model receives information regarding consumer returns from Block 807 of the consumer model, product purchased data 214, market demand and returns data 227)** [Column 4, lines 2-10, Column 5, lines 12-14, 16-18, 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25].

Claim 54 recites limitations already addressed by the rejection of claim 44 above; therefore, the same rejection applies.

Furthermore, as per (a), Keane teaches a plurality of computer-evolvable business models, each describing operations of a business for solving said business

problem, each having an ability to be in competition with other computer-evolvable business models for solving the said business problem, each having an ability to respond to a customer model patronizing it by sending at least one value to the said customer model, each having associated with it a performance model comprising a financial model **(financial model 108)** [Column 3, lines 25-27] which has the ability to determine at least one of revenue, profit, market share and market capitalization **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.; business model receives information regarding consumer returns from Block 807 of the consumer model, product purchased data 214, market demand and returns data 227; goods/services purchased by customers, returning defective merchandise and switching to competitive produces due to defects, product purchased data 214 and market demand and returns data 227)** [Column 4, lines 2-10, Column 5, lines 12-14, 16-18, 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25], and each comprising at least one building block chosen from a group consisting of value proposition building blocks **(goods/services purchased by customers, returning defective merchandise and switching to competitive produces due to defects)** [Column 5, lines 29-55], operational approach building blocks **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.)** [Column 5, lines 12-14 and 29-30 recited with column 4, lines 2-10], and revenue mechanism building blocks **(pricing information for the product, initial stock price and book**

value, cost requirements for quality assurance measures and production) [Figure 1 {106, 108}, column 4, lines 2-18 and column 2, line 55].

Further, as per (b) and (c)(ii), Keane teaches at least one supplier model having an ability to interact with at least on of said plurality of evolvable business models **(Raw materials are purchased from suppliers. This material is stored, inspected, processed and the final Product inspected before being shipped to consumers. Consumers use the product, and a portion of them discover defects. Of this portion, some return the defective Product to the business; business model receives information regarding consumer returns from Block 807 of the consumer model) {materials are purchased from suppliers, the business model itself is a supplier to consumer models}** [Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25], and (iv) one or more interactions between evolvable business models, supplier models, and/or customer models in which at least one of said customer models chooses to patronize at least one of said business models in the said business ecosystem, based at least in part upon one evolvable characteristic **(the labor rate is considered a parameter and subject to change while the type of business and characteristic defects are constant relative to a particular business; data such as the nature of the company, the characteristic defects and causes, and past performance is made resident in memory 102 by Block 52. This data customizes a particular business to provide realistic product flow and defects, rather than operating as a preset, arbitrary model. In one**

particular embodiment, a user may customize "defects" to his particular business to more realistically emulate the characteristic and cause of a defect) of the said evolvable business models, and at least one of said patronized business models responds by sending at least one value to the said at least one customer model; **(business model receives information regarding consumer returns from Block 807 of the consumer model, product purchased data 214, market demand and returns data 227)** [Column 3, lines 48-55, Column 4, lines 23-26, Column 5, lines 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25].

Further, as per (d)(iii), Keane teaches business models but not cross-over operators which transform at least two parent business models into at least one new business model by combining characteristics of both parent business models into the characteristics of the at least one new business model. However, Shinagawa et al teaches a cross-over process combining one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual [Column 2, lines 37-43].

Keane teaches the step of simulating quality of a business's product flow, yet Keane does not expressly teach the application of a genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model. However, Shinagawa et al. discloses the use of genetic algorithms that perform the steps of performing an evolutionary method on models, including determining model

fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models. Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems, which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2, lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use as a planning guide to determine the impact of different models on business performance.

Claim 55 recites limitations already addressed by the rejection of claim 44 above; therefore, the same rejection applies.

Furthermore, Keane is implemented on a computer-readable medium having computer-readable signals stored thereon that define instructions which, as a result of being executed in a computer system having a user interface including a display and an input device **(system 100 includes a central processor unit 101, memory 102 and a user interface 103. the user interface may comprise traditional equipment such as a monitor and printer for displaying information for the user and a keyboard and mouse for entering information)**, instruct the computer system to perform a method for choosing a business model to solve a selected business problem [Column 3, lines 17-21].

As per claim 56, Keane teaches a computer-readable medium according to claim 55, wherein an evolvable business model comprises at least one building block **(memory 102 includes at least a quality model 104 and possibly other models, such as business 105, accounting 106, consumer 107, financial 108, and macroeconomic 109)** [Column 3, lines 25-30, Column 7, lines 6-8 and Figure 1 {104, 105, 106, 108 and 109}].

As per claim 57, Keane teaches a computer-readable medium according to claim 56, wherein the said at least one building block is chosen from a group consisting of:

(a) at least one value proposition building block, each said value proposition building block comprising a description of at least one of:

(i) natures of one or more goods or services provided **(consumer model 107 emulates the goods/services purchased by customer)** [Column 5, lines 29-36];

(ii) qualities of the said goods or services provided **(defective products exchanged by customers; likelihood of switching, and likelihood of returns)** [Column 4, lines 15-16, Column 5, lines 29-36];

(iii) customers for said goods and services provided **(the number of consumers who purchase products from the business begins at an initial level and increases as a result of advertising and decreases as a result of dissatisfaction with defective products during a given period)** [Column 5, lines 32-36];

(iv) relations with other business models **(the business and quality models may be applied to the market demand and returns data 214 to adjust the product flow accordingly and to handle the returns)** [Column 5, lines 51-54]; and

(v) marketing to customers or business models **(consumer model includes effectiveness of advertising, likelihood of switching, and likelihood of returns)** [Column 4, lines 15-16];

(b) at least one operational approach building block, each said operational approach building block comprising a description of at least one of:

(i) inputs needed for one or more goods or services provided **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.)** [Column 4, lines 2-10, Column 5, lines 12-14, 16-18, 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25],

(ii) technology employed to produce said goods or services provided **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.)** [Column 4, lines 2-10]; and

(iii) capital and labor needed to produce said goods or services provided **(costs associated with production, including the capital, labor and material requirements, physical requirements of the plant, warehouse, etc.)** [Column 4, lines 2-10, Column 5, lines 12-14, 16-18, 28-55, Column 8, lines 16-18, Figure 4 described in Column 7, line 5-column 8, line 25]; and

(c) at least one revenue mechanism building block, each said revenue mechanism building block comprising a description of at least one of a margin or an amount per transaction **(pricing information for the product)**, a margin or an amount per unit time, a margin or an amount per unit volume, a transaction pricing mechanism, a subscription pricing mechanism, a flat rate pricing mechanism and a membership fee pricing mechanism [Column 4, lines 2-18 and Column 2, line 55].

As per claim 58, Keane teaches a computer-readable medium according to claim 55, wherein each evolvable business model has associated with it a performance model **(accounting model 106 is based on an accounting system, which in this particular embodiment is GAAP)** [Column 5, lines 15-17].

As per claim 59, Keane teaches a computer-readable medium according to claim 58, wherein the said performance model comprises a financial model **(financial model 108)** [Column 3, lines 25-27].

As per claim 60, Keane teaches a computer-readable medium according to claim 59, wherein the said financial model determines at least one of revenue, profit, market share and market capitalization **(goods/services purchased by customers, returning defective merchandise and switching to competitive products due to defects, product purchased data 214 and market demand and returns data 227)** [Column 5, lines 29-55].

As per claim 61, Keane teaches a computer-readable medium according to claim 55, wherein the business ecosystem further comprises at least one supplier model which has the ability to interact with at least one of said plurality of evolvable business models, and wherein determining an operational performance of an evolvable business model further comprises simulating the said at least one supplier model, and one or more interactions between evolvable business models, supplier models, and/or

customer models **(Figures 3-10 show flow charts representing the process of each model as well as the interaction between the models)** [Column 1, lines 11-12 and Column 6, lines 52-55].

As per claim 62, Keane does not explicitly teach a computer-readable medium according to claim 55, wherein said at least one genetic operator comprises a cross-over operator which transforms at least two parent business models into at least one new evolvable business model by combining characteristics of both parent business models into characteristics of the at least one new evolvable business model.

Keane teaches business models (as discussed above) but not cross-over operators which transform at least two parent business models into at least one new business model by combining characteristics of both parent business models into the characteristics of the at least one new business model. Keane teaches the step of simulating quality of a business's product flow, yet Keane does not expressly teach the application of a genetic algorithm comprising selection, crossover and mutation operators for building a fittest business model.

However, Shinagawa et al. discloses the use of genetic algorithms that perform the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models.

Shinagawa et al teaches a cross-over process combining one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual [Column 2, lines 37-43].

Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems, which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2, lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use

as a planning guide to determine the impact of different models on business performance.

As per claim 63, although not taught by Keane, Shinagawa et al. teaches a computer-readable medium according to claim 55, wherein said at least one genetic operator comprises a mutation operator **(mutation process)** which transforms a parent evolvable business model into a new evolvable business model by modifying a characteristic of the parent business model **(changes genes located in certain loci of a chromosome to other values, thereby producing a new individual; The mated parent individuals are then subjected to a crossover process. Crossover algorithms combine one part of one parent chromosome with the other part of the other parent chromosome to produce another chromosome, thereby producing a new individual. The offspring individual produced through such a crossover process inherits some traits from both parents)** [Column 2, lines 37-49].

Both Keane and Shinagawa et al. are directed toward optimizing solutions in business planning situations [e.g., Keane's simulator assists a user in making business performance decisions, as seen in Column 2, lines 52-55, and Shinagawa et al. solves commodity delivery problems, as seen in Column 3, lines 1-7]. Shinagawa et al. provides a user with a problem solver "for solving mathematical programming problems, which is capable of finding better solutions at a higher speed" [Column 3, lines 13-16]. Keane's system assists a user with solving mathematical problems as well [Column 2,

lines 1-23]; therefore, the Examiner submits that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate the steps of performing an evolutionary method on models, including determining model fitness, selection of models based on their fitness, and transforming models by applying genetic operators to yield new models that incorporate elements of the original models, as taught by Shinagawa et al, with Keane's financial simulations in order to allow Keane to solve its financial business (i.e., mathematical programming) problems with better solutions and at a higher speed [as suggested in Column 3, lines 13-16 of Shinagawa et al.], and the combination would provide a system enabling a user to efficiently and quickly solve multi-constraint problems as commonly faced by businesses, and for use as a planning guide to determine the impact of different models on business performance.

As per claim 64, Keane teaches a computer-readable medium according to claim 55, wherein an evolvable business model comprises a description of at least one of inputs to a business, values output from the said business, transformations of inputs into said business to values output from said business at least in part by the use of capital and labor, and at least one pricing model for said business [see analysis of claim 53 above].

Claim 65 recites limitations already addressed by the rejection of claim 54 above; therefore, the same rejection applies.

Furthermore, Keane is implemented on a computer-readable medium having computer-readable signals stored thereon that define instructions which, as a result of being executed in a computer system having a user interface including a display and an input device **(system 100 includes a central processor unit 101, memory 102 and a user interface 103. the user interface may comprise traditional equipment such as a monitor and printer for displaying information for the user and a keyboard and mouse for entering information)**, instruct the computer system to perform a method for choosing a business model to solve a selected business problem [Column 3, lines 17-21].

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Klein et al. (US Patent #6709,330) teaches a stock simulation engine for an options trading game. The simulated stock value of a plurality of companies are presented and manipulated based on interactions between different players.

Eder (US Patent #6,321,205) teaches a method of modeling and analyzing business improvement programs using a simulation model such as Monte Carlo by evaluating the probable impact of user-specified, or system generated changes in

business value drivers on the other value drivers, the financial performance, and future value of a commercial enterprise.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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PC

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PRIMARY EXAMINER

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